

REMARKS

Status of the Claims

Claims 1-6 are pending in the application, with Claims 1 and 4 being independent. Claims 1 and 4 have been amended. Support for the claim changes can be found in the original disclosure, for example at pages 36-47, and therefore no new matter has been added.

Requested Action

Applicant respectfully requests the Examiner to reconsider and withdraw the outstanding rejections in view of the foregoing amendments and the following remarks.

Claim Rejections

Claims 1, 2, 4 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,812,191 (Orava et al.) in view of U.S. Patent No. 7,098,950 (Yamamoto et al.), and U.S. Patent Publication No. 2001/0052941 (Matsunaga et al.). Claims 3 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Orava et al. in view of Yamamoto et al., and U.S. Patent No. 6,163,024 (Kozuka et al.).

In response, while not conceding the propriety of the rejections, independent Claims 1 and 4 have been amended. Applicant submits that as amended, these claims are allowable for the following reasons.

Independent Claim 1 relates to an image pickup apparatus in which a pixel area, including a plurality of pixels each having a photoelectric conversion portion and a common output portion configured to sequentially amplify and output signals from the

plurality of pixels included in the pixel area, is formed on a single semiconductor substrate. The apparatus comprises a power supply unit configured to effect power supply control of the common output portion independently of control of the power supply to the pixel area, and a control circuit.

Claim 1 has been amended to recite that the control circuit is configured to effect control in accordance with a photo-charge accumulation period of the photoelectric conversion portion so as to, if the photo-charge accumulation period of the photoelectric conversion portion is longer than a predetermined accumulation time, supply no power to the common output portion in a predetermined period after starting photo-charge accumulation in the photoelectric conversion portion and supply power to the common output portion before the end of the photo-charge accumulation period in the photoelectric conversion portion, and to, if the photo-charge accumulation period of the photoelectric conversion portion is shorter than a predetermined accumulation time, supply the power to the common output portion throughout the photo-charge accumulation period.

By this arrangement, different kinds of control of the power supply to the common output portion can be effected, depending on a specific condition of the photo-charge accumulation period of the photoelectric conversion portion, i.e., the length of the photo-charge accumulation period.

In contrast, the citations to Orava et al., Yamamoto et al., and Matsunaga et al. are not understood to disclose or suggest different kinds of control of the power supply to the common output portion, depending on a specific condition of the photo-charge accumulation period of the photoelectric conversion portion, such as the length of the photo-charge accumulation period. Therefore, these citations are not understood to

disclose or suggest a control circuit configured to effect control in accordance with a photo-charge accumulation period of the photoelectric conversion portion so as to, if the photo-charge accumulation period of the photoelectric conversion portion is longer than a predetermined accumulation time, supply no power to the common output portion in a predetermined period after starting photo-charge accumulation in the photoelectric conversion portion and supply power to the common output portion before the end of the photo-charge accumulation period in the photoelectric conversion portion, and to, if the photo-charge accumulation period of the photoelectric conversion portion is shorter than a predetermined accumulation time, supply the power to the common output portion throughout the photo-charge accumulation period, as recited by amended Claim 1.

As is admitted in the Office Action, the citations to Orava et al. and Yamamoto et al. fail to explicitly disclose that a control circuit is arranged to continue to supply the power to the common output portion throughout the photo-charge accumulation period if the photo-charge accumulation period of the photoelectric conversion portion is shorter than a predetermined accumulation time. For this reason, the Office Action cites paragraphs [0681] and [0728]-[0729] of the citation to Matsunaga et al. to disclose that such specific power supply control is effected if the photo-charge accumulation period of the photoelectric conversion portion is shorter than a predetermined accumulation time. But these portions of the citation to Matsunaga et al. are not understood to disclose different kinds of control of the power supply to a common output portion, depending on a specific condition of the photo-charge accumulation period of the photoelectric conversion portion, such as the length of the photo-charge accumulation period. Therefore, the

citation to Matsunaga et al. is understood to fail to disclose the control circuit recited in the amended independent Claim 1.

Since amended Claim 1 recites at least one feature not disclosed or suggested by the citations to Orava et al., Yamamoto et al., and Matsunaga et al., Applicant submits that the Office has not yet established a prima facie case of obviousness against amended Claim 1. Therefore, Applicant respectfully requests that the rejection of amended Claim 1 be withdrawn. And because Claim 4 has been amended in a similar manner (though it recites the supply of first and second power levels to the common output portion rather than supplying no power or power to the common output portion), it is submitted to be allowable for similar reasons. Therefore, Applicant respectfully requests that the rejection of amended Claim 4 be withdrawn.

The dependent claims are also submitted to be patentable, due to their dependency from the independent base claims, as well as due to additional features that are recited. Individual consideration of the dependent claims is respectfully solicited.

Conclusion

In view of the above amendments and remarks, the application is now in allowable form. Therefore, early passage to issue is respectfully solicited.

Any fee required in connection with this paper should be charged to Deposit Account No. 06-1205.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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